**Zał. nr 3 do ZW 25/2019**

**Attachment no. …. to Program of Studies**

**DESCRIPTION OF THE PROGRAM OF STUDIES**

**1.** **General description**

|  |  |
| --- | --- |
| *1.1 Number of semesters:* **4** | *1.2 Total number of ECTS points necessary to complete studies at a given level:* **120** |
| *1.3 Total number of hours:*  **1035** | *1.4 Prerequisites (particularly for second-level studies):*  According to the resolution No. 472/21/2016-2020 of PWr Senate. from 17 May 2018  According to the resolution No. 576/27/2016-202 of PWr Senate. from 20 December 2018 |
| *1.5 Upon completion of studies graduate obtains*  *professional degree of:* **magister** | *1.6 Graduate profile, employability:*  A masters graduate possesses advanced specialist knowledge in the field of management sciences in the following areas: analytical models and methods, integrated information systems and, in particular, contemporary concepts and methods in managing, planning and monitoring the results of the activities of an enterprise, together with the functioning, development and strategical renewal of organizations. A masters graduate is characterized by the ability to think abstractly and a critical approach to theory, which enables him/her to identify, describe, analyze and interpret the complex processes and problems of a firm and its surroundings. He/she is in possession of the ability to integrate knowledge from various disciplines (economics, psychology, law) and apply computer and mathematical tools to carry out a full diagnosis of a problem and create innovative solutions in the workplace.  Such masters graduates are qualified to work as an independent entrepreneur, manager, specialist or consultant due to their advanced ability to identify, formulate and solve problems within the framework of a complex and uncertain environment, as well as to select the appropriate methods and tools for analysis.  Such a masters graduate is able to apply advanced methods in the following areas: analysis of business data, data mining, discrete optimization, network flows, decision theory. He/she can implement and exploit appropriate business information systems. He/she is able to analyze the information and technological needs of an organization. He/she can define the legal, economic, financial, organizational and technological constraints on the functioning of an organization and implement innovations from information technology within such an organization.  This qualifies a masters graduate to carry out skilled work in the field of information systems, in particular, as an analyst of management information systems, a specialist implementing and maintaining such a system, an analyst of business processes, or a consultant in the field of applying information technology within enterprises. He/she is also qualified to take a role in middle and upper management in the field of information technology. |
| *1.7 Possibility of continuing studies:*  **third-level studies, doctoral studies** | *1.8 Indicate connection with University’s mission and its development strategy:*  Courses in Management are carried out within the Faculty of Computer Science and Management at Wrocław University of Science and Technology. Although, such a subject lies in the field of social science, it lies directly within the mission and development strategy of a technical university.  The educational program in Management is coherent with the mission of Wrocław University of Science and Technology in the following areas:  • Developing creative, critical and tolerant graduates, as studying a course in management develops these traits;  • Aiming to provide high quality courses and providing the students of Management and lecturers with conditions enabling open discussion and constructive criticism;  • Developing the values and tradition of higher education, wide-ranging cooperation with other universities via students taking part in the Erasmus program and with employers via practical learning, carried out in the form of projects in specific organizations;  • Aiming to make an impact on the national and international scene in the area of educating specialists in the field of management.  The development plan of the department is in line with the strategy of the university as a whole. In particular, the department “...connects theoretical, research and specialist abilities with educational and teaching skills. The department is a leading research and teaching center in Poland and an important center on the international scene. Its teaching and research profile, together with the quality of the courses and research carried out in economics and technical science, ensures it an appropriately high position in national and international rankings”. Teaching courses in management is one of the long standing elements in the department's development strategy. In accordance with the decisions made at Wrocław University of Technology, our courses in management have an interdisciplinary nature. The program satisfies all the conditions stipulated in current legislation and is also in accordance with the National Educational Plan in the field of social science. In line with the university's strategy, in order to increase the attractiveness of our courses on the educational market, our programs in management have a unique character, since they make use of the natural - in business practice - complementarity of technical science and economics, enriched with the element of computer science. In accordance with the university's strategy and the department's development plan, which indicates the need for interaction with the region and its economy, they created a framework which ensures that students have systematic contact with enterprises and other institutions during their studies.  In line with the university's development strategy, the quality of our courses is being improved in all aspects. This is achieved through the development of our lecturers' research and teaching skills, as well as systematic refurbishment of the department's infrastructure, including modernization of lecture theaters, audio-visual equipment and computer laboratories.  The program of masters studies in management develops the theoretical knowledge and practical skills of students, enabling graduates to be highly competitiveness on the employment market. Graduates are able to undertake doctoral studies and carry out their own research. They also are conscious of the need for constant self-development in cooperation with their alma mater. |

1. **Detailed description**

**2.1 Total number of learning outcomes in the program of study:**

**W (knowledge) = 16+5, U (skills) = 22+5, K (competences) = 9, W + U + K = 57**

**2.2 For the main field of study assigned to more than one discipline - the number of learning outcomes assigned to the discipline:  
 D1 (major) ......... (this number must be greater than half the total number of learning outcomes)  
 D2 ......... ..  
 D3 ......... ..  
 D4 ......... ..**

**2.3 For the field of study assigned to more than one discipline - percentage share of the number of ECTS points for each discipline:  
 D1 ......... ..% ECTS points  
 D2 ......... ..% ECTS points  
 D3 ......... ..% ECTS points  
 D4 ......... ..% ECTS points**

**2.4a. For the general academic profile field of study – the number of ECTS points assigned to the classes related to the University's academic activity in the discipline or disciplines to which the faculty is assigned (must be greater than 50% of the total number of ECTS points from 1.1)** ...**117** ECTS......

**2.4b. For the practical profile field of study - the number of ECTS points assigned to the classes shaping practical skills (must be greater than 50% of the total number of ECTS points from 1.1)**

**2.5 Concise analysis of compliance of the assumed learning outcomes with the needs of the labor market**

The educational goals of our masters studies satisfy the following needs of employers on the job market:

* The need for employees to understand the functioning of an enterprise from a strategiecal perspective and, in particular, to assess and improve a firm's competitive and value (medium-sized and large enterprises);
* The ability to work independently, as well as to play various roles in a team including diagnosing problems, designing and implementing solutions in various functional areas of an enterprise - as appropriate to the graduate's speciality (medium-sized and large enterprises);
* Seeing the need for innovative methods and techniques for management and computer tools, as well as designing or choosing and implementing them;
* The ability to learn and share knowledge with others, as well as creativeness and openness to innovations.

These specific effects answer the need for specialists/managers in IT departments working on the maintenance/development of computer software aiding management at the strategic and operational levels of enterprises and other organizations carrying out production, trade, services or research activities.

The masters level course programs in management, together with the long standing experience of the teaching staff, create the conditions for students to achieve the set goals and to meet the demands of employers.

**2.6. The total number of ECTS points that a student must obtain in classes requiring direct participation of academic teachers or other persons conducting classes and students** (enter the sum of ECTS points for courses / groups of courses marked with the BK1 code) ...**120.**... ECTS

**2.7.** **Total number of ECTS points, which student has to obtain from basic sciences classes**

|  |  |
| --- | --- |
| Number of ECTS points for obligatory subjects | **32** |
| Number of ECTS points for optional subjects | **0** |
| Total number of ECTS points | **32** |

**2.8.** **Total number of ECTS points, which student has to obtain from practical classes, including laboratory classes** (enter total number of ECTS points for courses/group of courses denoted with code P)

|  |  |
| --- | --- |
| Number of ECTS points for obligatory subjects | **38** |
| Number of ECTS points for optional subjects | **26** |
| Total number of ECTS points | **64** |

**2.9.** **Minimum number of ECTS points, which student has to obtain doing education blocks offered as part of university-wide classes or other main field of study** (enter number of ECTS points for courses/groups of courses denoted with code OG)

…**3**…. ECTS points

**2.10.** **Total number of ECTS points, which student may obtain doing optional blocks (min. 30% of total number of ECTS points)**

…**26**…. ECTS points

**3.** **Description of the process leading to learning outcomes acquisition:**

The process leading to achievement of the assumed learning outcomes for the main field of studies includes active participation in the classes organized at the university: lectures, classes, laboratories, projects and seminars, as well as self-studies enabling consolidation, supplementation and extension of knowledge. If necessary, the student may use individual consultations. Learning outcomes in terms of skills are further developed during obligatory student training program.

**4.** **List of education blocks:**

**4.1. List of obligatory blocks:**

**4.1.1 List of general education blocks**

**4.1.1.1 *Liberal-managerial subjects* block***(min. ...... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.1.1.2 *Foreign languages* block** *(min. .......... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.1.1.3 *Sporting classes* block** *(0 ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.1.1.4 *Information technologies* block***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Altogether for general education blocks**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

**4.1.2 List of basic sciences blocks**

**4.1.2.1 *Mathematics* block**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | MAZ1202W | Business Statistics | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | PD | Ob |
| 2 | MAZ1202L | Business Statistics |  |  | 1 |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | PD | Ob |
| 3 | MAZ1203W | Econometrics | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | K | Ob |
| 4 | MAZ1203P | Econometrics |  |  |  | 1 |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | K | Ob |
| 5 | MAZ1201W | Operations Research | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | E |  |  | K | Ob |
| 6 | MAZ1201L | Operations Research |  |  | 2 |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  | P | K | Ob |
|  | | Total | **3** | **0** | **3** | **1** | **0** |  | **105** | **360** | **12** | **3,5** |  |  |  |  |  |  |

**4.1.2.2 *Physics* block**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | FZZ2513W | Work environment physics | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | PD | Ob |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total | **1** | **0** | **0** | **0** | **0** |  | **15** | **60** | **2** | **0,5** |  |  |  |  |  |  |

**4.1.2.3 *Chemistry* block**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

***other…….***

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | PRZ1206W | Legal protection of information | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | PD | Ob |
| 2 | PRZ1206C | Legal protection of information |  | 1 |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | PD | Ob |
| 3 | ZMZ1228W | Contemporary Management | 2 |  |  |  |  |  | 30 | 120 | 4 | 1,0 | T | E |  |  | PD | Ob |
| 4 | ZMZ1228C | Contemporary Management |  | 1 |  |  |  |  |  | 60 | 2 | 0,5 | T | Z |  | P | PD | Ob |
| 5 | EKZ1183W | Macroeconomic modeling | 1 |  |  |  |  |  |  | 90 | 3 | 0,5 | T | E |  |  | PD | Ob |
| 6 | EKZ1183C | Macroeconomic modeling |  | 1 |  |  |  |  |  | 60 | 2 | 0,5 | T | Z |  | P | PD | Ob |
| 7 | ZMZ2201W | Management Ethics | 2 |  |  |  |  |  |  | 90 | 3 | 1,0 | T | Z |  |  | PD | Ob |
|  | | Total | **6** | **3** | **0** | **0** | **0** |  | **135** | **540** | **18** | **4,5** |  |  |  |  |  |  |

**Altogether for basic sciences blocks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  | **10** | **3** | **3** | **1** | **0** | **255** | **960** | **32** | **8,5** |

**4.1.3 List of main-field-of-study blocks**

**4.1.3.1 *Obligatory main-field-of-study* blocks**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | PRZ1207W | Legal protection and commercialization of knowledge | 1 |  |  |  |  |  | 15 | 30 | 1 | 0,5 | T | Z |  |  | K | Ob |
| 2 | ZMZ1402W | Logistics Management Tools | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | K | Ob |
| 3 | FBZ1201W | Management Accounting | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | K | Ob |
| 4 | FBZ1201C | Management Accounting |  | 1 |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | K | Ob |
| 5 | PSZ2201W | Organizational Psychology | 2 |  |  |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  |  | K | Ob |
| 6 | ZMZ1201W | Process Management | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | K | Ob |
| 7 | ZMZ2204W | Strategic Management | 1 |  |  |  |  |  | 15 | 90 | 3 | 0,5 | T | Z |  |  | K | Ob |
| 8 | ZMZ2204S | Strategic Management |  |  |  |  | 1 |  | 15 | 90 | 3 | 0,5 | T | Z |  | P | K | Ob |
|  | | Total | **7** | **1** | **0** | **0** | **1** |  | **135** | **510** | **17** | **4,5** |  |  |  |  |  |  |

**4.1.3.2 ……………… block**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Altogether (for main-field-of-study blocks):**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  | **7** | **1** | **0** | **0** | **1** | **135** | **510** | **17** | **4,5** |

**4.2 List of optional blocks**

**4.2.1 List of general education blocks**

**4.2.1.1 Liberal-managerial subjects blocks***(min. ...... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.2.1.2 *Foreign languages* block** *(min. ....***3***...... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | JZL | Foreign Language B2+ |  | 1 |  |  |  |  | 15 | 30 | 1 | 0,5 | T | Z | O | P | O | W |
| 2 | JZL | Foreign Language A1 or A2 |  | 3 |  |  |  |  | 45 | 60 | 2 | 1,5 | T | Z | O | P | O | W |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total | **0** | **4** | **0** | **0** | **0** |  | **60** | **90** | **3** | **2,0** |  |  |  |  |  |  |

**4.2.1.3 Sporting classes block** *(0. ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.2.1.4 *Information technologies* block***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Altogether for general education blocks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  | **0** | **4** | **0** | **0** | **0** | **60** | **90** | **3** | **2,0** |

**4.2.2 List of basic sciences blocks**

**4.2.2.1 *Mathematics* block***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.2.2.2 *Physics* block***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**4.2.2.3 *Chemistry* block***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

**Altogether for basic sciences blocks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |

**4.2.3 List of main-field-of-study blocks**

**4.2.3.1 ……………… block** *(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | ZMZ2202S | Seminar I |  |  |  |  | 1 |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 2 | ZMZ2203S | Seminar II |  |  |  |  | 1 |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | | Total | **0** | **0** | **0** | **0** | **2** |  | **30** | **120** | **4** | **1,0** |  |  |  |  |  |  |

**………..**

**Altogether for main-field-of-study blocks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  | **0** | **0** | **0** | **0** | **2** | **30** | **120** | **4** | **1,0** |

**4.2.4** **List of specialization blocks**

**4.2.4.1 *Specialization subjects* *(e.g. whole specialization)* blocks***(min. .... ECTS points):*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| No. | Course/group of courses code | Name of course/group of courses (denote group of courses with symbol **GK**) | Weekly number of hours | | | | | Learning effect symbol | Number of hours | | Number of ECTS points | | Form2 of course/group of courses | Way3 of crediting | Course/group of courses | | | |
| lec | cl | lab | pr | sem | ZZU | CNPS | total | BK classes1 | university-wide4 | practical5 | kind6 | type7 |
| 1 | IEZ1205W | Business Data Analysis | 2 |  |  |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  |  | S | Ob |
| 2 | IEZ1205L | Business Data Analysis |  |  | 1 |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 3 | IEZ2201W | Business Process Modeling | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | S | Ob |
| 4 | IEZ2201L | Business Process Modeling |  |  | 1 |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 5 | IEZ2201P | Business Process Modeling |  |  |  | 1 |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 6 | IEZ2203W | Data Mining | 1 |  |  |  |  |  | 15 | 90 | 3 | 0,5 | T | E |  |  | S | Ob |
| 7 | IEZ2203P | Data Mining |  |  |  | 2 |  |  | 30 | 60 | 2 | 1,0 | T | Z |  | P | S | Ob |
| 8 | IEZ1206W | Discrete Optimization and Network Flows | 2 |  |  |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  |  | S | Ob |
| 9 | IEZ1206L | Discrete Optimization and Network Flows |  |  | 1 |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 10 | IEZ2205W | e-Economy | 1 |  |  |  |  |  | 15 | 90 | 3 | 0,5 | T | Z |  |  | S | Ob |
| 11 | IEZ2204W | Games and Decisions in Management | 2 |  |  |  |  |  | 30 | 90 | 3 | 1,0 | T | E |  |  | S | Ob |
| 12 | IEZ2204C | Games and Decisions in Management |  | 1 |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 13 | IEZ1201W | Information Systems Analysis | 1 |  |  |  |  |  | 15 | 30 | 1 | 0,5 | T | Z |  |  | S | Ob |
| 14 | IEZ1202W | Internet Information Services and Systems | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | S | Ob |
| 15 | IEZ1202L | Internet Information Services and Systems |  |  | 2 |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  | P | S | Ob |
| 16 | IEZ1204W | Management Information Systems | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | E |  |  | S | Ob |
| 17 | IEZ1204L | Management Information Systems |  |  | 2 |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  | P | S | Ob |
| 18 | IEZ1204S | Management Information Systems |  |  |  |  | 1 |  | 15 | 30 | 1 | 0,5 | T | Z |  | P | S | Ob |
| 19 | IEZ1203W | Management Information Systems Modeling | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | S | Ob |
| 20 | IEZ1203L | Management Information Systems Modeling |  |  | 1 |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  | P | S | Ob |
| 21 | ZMZ2205P | MSc Thesis I |  |  |  | 2 |  |  | 30 | 150 | 5 | 0,0 | T | Z |  | P | S | Ob |
| 22 | ZMZ2627D | MSc Thesis II |  |  |  | 6 |  |  | 90 | 420 | 14 | 0,0 | T | Z |  | P | S | Ob |
| 23 | IEZ2206W | Business Object Modeling | 1 |  |  |  |  |  | 15 | 60 | 2 | 0,5 | T | Z |  |  | S | Ob |
| 24 | IEZ2206L | Business Object Modeling |  |  | 2 |  |  |  | 30 | 60 | 2 | 1,0 | T | Z |  | P | S | Ob |
|  | | Total | **14** | **1** | **10** | **11** | **1** |  | **555** | **1920** | **64** | **14,5** |  |  |  |  |  |  |

**4.2.4.2………………*(e.g. diploma profile)* block***(min. .... ECTS points):*

**Altogether for specialization blocks:**

|  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  |  | Total number of hours | | | | | Total number of  ZZU  hours | Total number of CNPS hours | Total number of ECTS points | Number of ECTS points for BK classes1 |
| lec | cl | lab | pr | sem |  |  |  |  |
|  |  |  | **14** | **1** | **10** | **11** | **1** | **555** | **1920** | **64** | **14,5** |

**4.3** **Training block - concerning principles of training crediting – attachment no. …**

**Faculty Council resolution (for programs adopted to September 30, 2019) / recommendation of the program's Faculty Committee (for programs adopted after September 30, 2019)\***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Name of training** | | |  | | |
| **Number of ECTS points** | **Number of ECTS points for BK classes1** | | | **Training crediting mode** | **Code** |
|  |  | | |  |  |
| **Training duration** | | **Training objective** | | | |
|  | |  | | | |

**4.4** „**Diploma dissertation” block (*if it is foreseen at first level studies)***

|  |  |  |
| --- | --- | --- |
| **Type of diploma dissertation** | Licencjat / inżynier / magister / magister inżynier\* | |
| **Number of diploma dissertation semesters** | **Number of ECTS points** | **Code** |
| **3** | **2**  **2**  **5**  **14** | **ZMZ2202S Seminar I**  **ZMZ2203S Seminar II**  **ZMZ2205P MSc Thesis I**  **ZMZ2627D MSc Thesis II** |
| **Character of diploma dissertation** | | |
| **Literature survey, project, computer program, etc.** | | |
| **Number of BK1 ECTS points** | **23** | |

**5. Ways of verifying assumed learning outcomes**

|  |  |
| --- | --- |
| **Type of classes** | **Ways of verifying assumed learning outcomes** |
| lecture | Examination or test - multiple choice questions with single or multiple answers; open questions |
| problems classes | Test (multiple choice and/or open questions); written reports in the form of presentations - literature and case studies, diagnostic and/or project reports - empirical research in real organizations, presenting the opinions of representatives of such organizations; spoken presentations using modern presentation technology |
| laboratory | Technical report or test |
| project | Written report documenting the diagnosis and solution of a problem, spoken presentation of the project with questions. |
| seminar | Choice and formulation of a problem/theme; activeness in discussions, written report in an academic style, essay, “mini”-monograph. Spoken presentations using modern presentation technology |
| work placement | Written report on the work practice given by the student's placement supervisor, confirmation of the completion and nature of the work placement by the employer |
| diploma thesis | Written report satisfying the current regulations for diploma theses, assessed by the supervisor and a reviewer using an appropriate form. |
| diploma examination | Spoken presentation of the results of the diploma thesis, answers to questions given by the examination committee, spoken answers to randomly chosen questions from the set appearing in the program of studies. |

**6.** **Range of diploma examination**

1. What kinds of data may a company collect and what statistical tools can be used for analysing them? (Business Data Analysis)
2. Methods of modeling business processes. (Business Process Modeling)
3. Significance: its place and role in statistics. (Business Statistics)
4. Describe the basic types of legally protected information (Legal protection of information)
5. List and discuss the categories referred to as intellectual property. Explain the concept of the commercialization of knowledge (Legal protection and commercialization of knowledge)
6. Methods of data mining and their applications. (Data mining)
7. Describe the minimum cost flow problem and show some of its applications. (Discrete Optimization and Network Flows)
8. The essence of the Gauss-Markov assumptions in econometrical modeling. (Econometrics)
9. E-government and its importance for citizens. (e-Economy)
10. The functioning and structure of an Enterprise Management System (Contemporary Management)
11. Describe the concept of an equilibrium in game theory (Games and Decisions in Management)
12. Methods for gathering the information required to manage an organization (Information Systems Analysis)
13. What are the features, advantages and disadvantages of various dynamic web content platforms? (Internet Information Services and Systems )
14. Explain the concept of Just - in - Time. (Logistics Management Tools)
15. Models of economic growth (Macroeconomic modeling)
16. Ethical aspects of business activity (Management Ethics)
17. General characteristics of management information systems (Management Information Systems)
18. Describe the reference concepts for models of information systems, which consist of two main components: the model of structures (ERD) and the model of processes (HFD, DFD). (Management Information Systems Modeling)
19. How does Cost-Volume-Profit Analysis support decision making - explain using examples (Managerial Accounting)
20. Business architectures and UML applications for modeling them. (Business Object Modeling)
21. Applications of linear programming and integer programming. Solving linear programming and integer programming problems (Operations Research)
22. The main psychological factors influencing the performance of employees (Organizational Psychology)
23. What are the differences between process oriented and functional organizations? (Process Management)
24. **Describe Porter's model of competitive strategies** (Strategic Management)

**7.** **Requirements concerning deadlines for crediting courses/groups of courses for all courses in particular blocks**

|  |  |  |  |
| --- | --- | --- | --- |
| *No.* | *Course / group of courses code* | *Name of course / group of courses* | *Crediting by deadline of... (number of semester)* |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |
|  |  |  |  |

**9.** **Plan of studies (attachment no. ……)**

Approved by faculty student government legislative body:

................... ................................................................................

Date, name and surname, signature of student representative

................... ................................................................................

Date, Dean’s signature

\*delete as appropriate